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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/688,320
Filing Date: October 15, 2003
Appellant(s): CLARNER, MARK A.

MAILED

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GROUP 3600

Brett A. Kruger (Reg. No. 54,243)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11 October 2006 appealing from the Office action mailed 07 December 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Claims 4, 18-23, 29, 38-44, 56-59, 69-75 have been canceled.

Claims 1, 27, 48, 61 have been previously amended.

Claims 76-79 have been previously added.

Claims 1-3, 5-17, 24-28, 30-37, 45-55, 60-68, and 76-79 are pending.

This appeal involves claims 1-3, 5-17, 24-28, 30-37, 45-55, 60-68, and 76-79.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is incorrect.

Appellant's "Summary of Claimed Subject Matter" is inconsistent with the originally filed disclosure, and therefore, the "Summary" is incorrect. Appellant has added subject matter that is not in agreement with the compliance of a correct summary.

Appellant's added subject matter amounts to allegations of economical and performance considerations that are not supported in the originally filed disclosure. The added subject matter is found in Appellant's brief under the heading "Summary of Claimed Subject Matter" in the following pages and lines:

on page 7, lines 9-13, regarding

"Applicant has discovered that a G/A ratio of less than 0.6 provides fastener elements that are easier to de-mold from cavities of mold rolls, providing for improved manufacturability at a reduced cost. At the same time, Applicant has also found that fastener elements having such ratios provide for improved fastening performance when mating with, e.g., low loft loops, and also provide for enhanced product cycle life.";

on page 7, lines 18-22 regarding

"Applicant has discovered that a ratio of an overall height (J) of at least one of the heads to a height (G) of a lowermost extent of the well that is greater than 0.7 can be helpful in improving fastening performance when mated with low loft loops, resulting in particularly good hook strength for the overall thickness of the fastener product.";

on page 7, lines 26-29 regarding

"Applicant has discovered that a ratio of an overall length (L) of the fastener element to a height (G) of a lowermost extent of the well that is greater than 2.5 results in particularly good hook strength for the overall thickness of the fastener product, and can improve manufacturability."; and

on page 8, lines 3-5 regarding

"Applicant has discovered that a mold release factor (MRF) of less than 0.1 can provide a low degree of mold lock, which has been found to improve manufacturability, e.g., by allowing for easier demolding of the fastener elements from cavities of mold rolls."

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Hence, as far as an acceptably correct Summary, only those portions of Appellant's Summary, not including the added subject matter described above, have been considered as correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,781,969	Akeno et al.	7-1998
6,484,371	Romanko et al.	11-2002
5,537,720	Takizawa et al.	7-1996

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(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

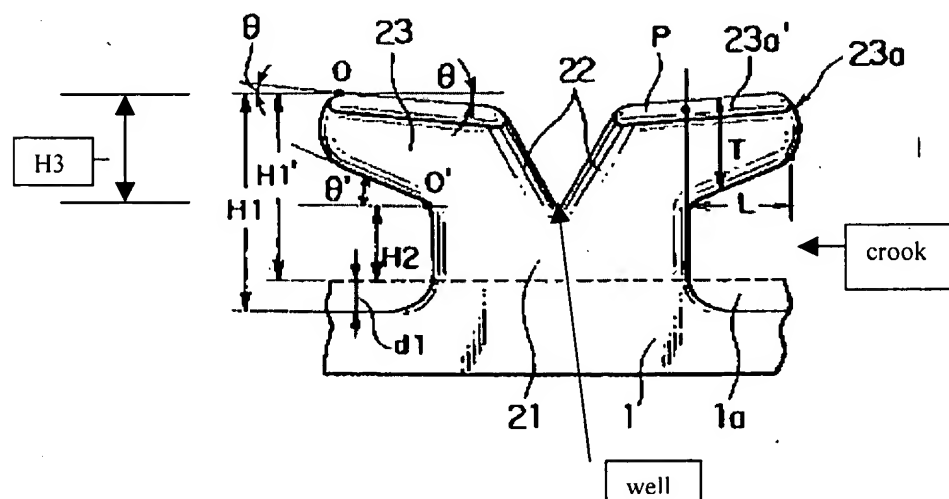
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-9, 11-13, 15-17, 25-28, 31-34, 36, 37, 46-49, 51-55, 61-63, 65-68, and 76-79 are rejected under 35 U.S.C. 102(b) as being anticipated by Akeno et al. (U. S. Patent No. 5,781,969).

Akeno et al. ('969) discloses a touch fastener component (see Figures 1-10) having a base (1) and an array of fastener elements (23; Fig. 1), each of the fastener elements comprising: a stem (21) extending outwardly from and integrally with the sheet-form base, and two heads (23) extending in essentially opposite directions in an engagement plane from a distal end of the stem to corresponding tips, each head having a lower surface forming a crook for retaining loops, the fastener element having an upper surface that defines a well (see Fig. 4B below)

FIG. 4B

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between the heads; wherein a height (equal to H2) of a lowermost extent of the well, measured from and perpendicular to the sheet-form base, is less than 60 percent of an overall height (H1) of the fastener element, measured perpendicular to the sheet-form base (see also the discussion of H1, H2, in col. 11, lines 1 through 38):

Akeno et al. states in col. 11, lines 1-11,

“

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hollow may be a generally U shape or any other similar shape. Although the bottom of the hollow defined between the confronting inner surfaces 22a of the necks 22 may be disposed at a desired position, it should be disposed preferably in or slightly under a horizontal plane passing lower ends of bottom surfaces of the engaging heads 23. Because of this deep hollow, it is possible to make the individual necks 22 easier to resiliently deform so that the companion loops can come into and out of engagement with the engaging heads 23 smoothly.

10 ”,

and in col. 11, the paragraph beginning on line 30, stating,

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“

Regarding the engaging element 2 of FIG. 4, an example 30
of parameters are as follows. The distance H1' between the
uppermost point O of the distal end of the engaging head 23
and the front surface of the substrate sheet 1 is 0.297 mm
(the height H1 from the bottom surface of the recess 1a is
0.348 mm). the length L1 of the engaging head 23 from the 35
stem 21 is 0.152 mm. and the height H2 of the stem 21 above
the front surface of the substrate sheet where the recess 1a
does not exist is 0.125 mm. The angles θ inclination of the
flat top surface P of the engaging head 23 is 13.3°, the angle
 θ' of inclination of the lower surface of the engaging head 23 40
is 20.6°, the width W2 of the total length of the top 23a with
two protuberances 23a' is 0.263 mm. the width W1 of the
stem 21, the neck 22 and the engaging head 23 excluding the
top 23a is 0.15 mm. the thickness L2 of the protuberance
23a' in a bulging direction is 0.56 mm. the total area of the 45
flat top surfaces P of all the engaging heads 23 is 35% of the
area of the front surface of the substrate sheet 1. and the
density of the engaging elements 21 is 250/cm². These
numeral values, which are only as an optimum example,
should by no means be limited to these values and may be 50
changed as desired in relation to the companion loops.”

Hence, since Akeno's "hollow", which is analogous to appellant's claimed "well", has been described as "it should be disposed preferably in or slightly under a horizontal plane passing lower ends of bottom surfaces of the engaging heads 23", where the "lower ends of bottoms of the engaging heads 23" are shown at O' in Fig. 4B (i.e., "base end O'" of engaging head 23; see col. 10, lines 27-28), the height of the hollow is measured from the bottom of recess 1a to O' corresponds to the **sum of depth d1 and height H2**.

In col. 11, lines 36-38, H2 is stated as being 0.125 mm.

In col. 11, lines 34-35, H1 is 0.348 mm.

In col. 11, lines 31-33, H1' is 0.297 mm.

Accordingly, $d1 = H1 \text{ minus } H1' \Rightarrow 0.348 \text{ mm minus } 0.297 \text{ mm} = 0.051 \text{ mm}$.

As a result, $d1 \text{ plus } H2 \Rightarrow 0.051 \text{ mm plus } 0.125 \text{ mm} = 0.176 \text{ mm}$.

Appellant's height (G) of the lowermost extent of the well corresponds to Akeno's d1 plus H2 which is 0.176 mm.

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Appellant's overall height (A) correspond to Akeno's H1.

Therefore, since the claims require $G/A < 0.6$, and Akeno's $(d1 + H2)/H1$ is $0.176 \text{ mm}/0.348 \text{ mm}$ equating to approximately 0.50575, then the claimed requirement is met by Akeno et al. since $0.50575 < 0.6$.

Concerning claim 2) the height of the lowermost extent of the well (H2) is at least about 70 percent of an overall height (H3) of one of the two oppositely-directed heads, measured perpendicular to the base from the tip of the head to an uppermost extent of the head;

(concerning claims 3, 28, 49, 63) wherein each fastener element has an overall length between opposite extents of the heads, measured parallel to the base, of at least 1.8 times the overall height of the fastener element;

(concerning claims 6, 31, 51, 65) an overall height of one of the two oppositely-directed heads, measured perpendicular to the base from the tip of the head to an uppermost extent of the head, is less than 60 percent of the overall height of the fastener element;

(concerning claims 7, 32, 48) Fig. 4B clearly demonstrates a ratio of an overall length of the fastener element, measured parallel to the sheet-form base in the engagement plane, to the height (H2) of the lowermost extent of the well, is greater than 2.5;

(concerning claims 8, 33, 52, 61) Fig. 4B clearly demonstrates wherein each fastener element has a mold release factor, defined as a ratio of a difference between a minimum solid length of the stem, measured parallel to the sheet-form base in side view, and a maximum solid length of the fastener element, measured parallel to the sheet-form base in side view above an elevation corresponding to the minimum solid length, to the minimum solid length of the stem, of less than 0.1 (e.g., as low as zero);

(concerning claims 9, 34, 53, 66) wherein at least one of the heads has an overall height, measured perpendicular to the sheet-form base from a lowermost extent of the tip of the head to an uppermost extent of the head, that is greater than half of an overall height of the fastener element, measured perpendicular to the sheet-form base;

(concerning claim 11) the lower surfaces of the heads are arched (near upper portion of stem);

(concerning claim 12) the heads and stem form a unitary molded structure;

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(concerning claim 13) the heads have surfaces of resin cooled against mold surfaces (via 7b);

(concerning claim 15) the stem and heads have side surfaces (Fig. 4C) lying in parallel planes;

(concerning claims 16, 36, 55, and 67, so far as definite) the crooks (portion defined by length L) overhang surfaces of the stem;

(concerning claims 17, 37, 55, and 68) the crooks overhang stem surfaces that extend at an inclination angle of between about 20 and 30 degrees (i.e., angle theta is 0 to 35 degrees; column 10, line 32) with respect to a normal to the base;

(concerning claims 25, 46) the fastener elements are arranged in a density of at least 350 fastener elements per square inch (i.e., "250/cm²", col. 11, line 48) of the base;

(concerning claims 26, 47) the fastener elements together cover at least 20 percent ("35%", col. 11, line 46) of an overall surface area of the base from which the fastener elements extend;

(concerning claim 27) wherein a ratio of an overall height of at least one of the heads (Akeno's H1' minus H2), measured perpendicular to the sheet-form base from a lowermost extent of the tip to an uppermost extent of the head, to a height of a lowermost extent of the well (Akeno's d1 plus H2), measured from and perpendicular to the sheet-form base, is greater than 0.7, which corresponds to Akeno's $(H1' \text{ minus } H2)/(d1 \text{ plus } H2) = (0.297 \text{ mm} - 0.125 \text{ mm})/(0.051 \text{ mm} + 0.125 \text{ mm}) = 0.172/0.176$ which equates to approximately 0.977, which is greater than 0.7;

(concerning claim 62) the mold release factor is less than 0.05 (e.g., as low as zero); and

(concerning claim 76-79) the height of the fastener element is measured at a molded upper surface of the fastener element.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 14, 24, 30, 45, 50, 60, and 64, are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeno et al. ('969). Akeno et al. ('969) discloses the claimed fastener component except for describing the dimensions of the fastener component, wherein the dimensions are representative of:

(concerning claims 5, 30, 50, 64) wherein a ratio of an overall height of each crook, measured perpendicular to the sheet-form base from a lowermost extent of the corresponding tip to an uppermost extent of the crook, to an entrance height measured perpendicular to the sheet-form base below a lowermost extent of the corresponding tip, is greater than 0.6;

It would have been obvious and within routine skill to one of ordinary skill in the art at the time the invention was made to have adjusted each of the overall dimensions of the fastener component features since dimensional characteristics are routinely selected according to the fasteners intended use. Fastener characteristics regarding overall heights of fastener elements, fastener element heads, and crook, are adjusted to a higher height in applications where the fastener component may be embedded in a foam substrate of an upholstered chair for subsequently attaching a fabric cover thereto. The overall heights of the fastener element characteristics are adjusted to smaller heights for use as conventional touch fasteners for providing a fabric like texture to garment closure fasteners.

Concerning claim 14, Akeno et al. ('969) discloses the claimed fastener component except for wherein the stem has opposing surfaces defined by severed resin. Claim 14 is directed to a product-by-process claim wherein the process relied upon is a "severed" step in producing the opposing surfaces of the stem. This limitation is not given a patentable weight since the structural limitations of the claimed product are met by Akeno et al. ('969). It has been held that if the product defined in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made from a different process. See *In re Thorpe*, 77 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985).

Claims 24, 45, and 60, are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeno et al. ('969) in view of Romanko et al. (U. S. Patent No. 6,484,371). Akeno et al. ('969)

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discloses the claimed fastener component except for wherein the component further comprising a backing material laminated to a side of the base opposite the fastener elements. In view of Romanko et al. ('371), it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a backing material laminated to a side of the base opposite the fastener elements of Akeno et al. ('969), since Romanko et al. ('371) describes and shows a fastener 30 (see Figs. 3a-3g) having a backing material including loops 37, film layer 31, and adhesive layer 35 laminated to a side of the base opposite the fastener elements 33, in order to provide "hook-and-loop type a bundling or strap fasteners" (col. 7, line 36) that are well known for their use in bundling articles together, such as bundling cables.

Claims 10 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeno et al. ('969) in view of Takizawa et al. (U. S. Patent No. 5,537,720). Akeno et al. ('969) discloses the claimed fastener component except for wherein the tips extend toward the base. Takizawa et al. ('720) discloses a fastener component that has tips extending toward the base. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the fastener components of Akeno et al. ('969) to have their tips extending toward the base of the fastener component since Takizawa et al. ('720) makes it known in the fastener art to provide the feature of the tips extending toward the base of a fastener component when such fastener components are used in engaging loops 3 of a mating fastener component.

(10) Response to Argument

Regarding appellant's argument concerning claims 1-3, 6-9, 11-13, 15-17, 25-28, 31-34, 36, 37, 46-49, 51-55, 61-63, 64-68 and 76-79, and particularly claim 1 and it depending claims, where Akeno does not meet the limitation(s) wherein "a height (G) of a lowermost extent of the well that is less than 60 percent of an overall height (A) of the fastener element (i.e., $G/A < 0.6$)", such that Akeno provides no disclosure to place the "V" (i.e., well) in the location indicated in the provide Fig. 4B herein. Appellant further argues, in citing *Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc.*² In *Hockerson*, (222 F.3d 951 (Fed. Cir. 2000) and *Olsen* (212 F.2d 590 (CCPA 1954)), that since the drawings of Akeno are not to scale, the "Akeno patent cannot be relied upon to show particular ratios with respect to any ratio or measurement that requires the

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height or location of the bottom of the “V” in Akeno.” This argument is not found persuasive, since Akeno’s “hollow”, which is analogous to appellant’s claimed “well”, has been described as “it should be disposed preferably in or slightly under a horizontal plane passing lower ends of bottom surfaces of the engaging heads 23”, where the “lower ends of bottoms of the engaging heads 23” are shown at O’ in Fig. 4B (i.e., “base end O’ ” of engaging head 23; see col. 10, lines 27-28), the height of the hollow is measured from the bottom of recess 1a to O’ corresponds to the **sum of depth d1 and height H2**.

In col. 11, lines 36-38, H2 is stated as being 0.125 mm.

In col. 11, lines 34-35, H1 is 0.348 mm.

In col. 11, lines 31-33, H1’ is 0.297 mm.

Accordingly, $d1 = H1 \text{ minus } H1' \Rightarrow 0.348 \text{ mm minus } 0.297 \text{ mm} = 0.051 \text{ mm}$.

As a result, $d1 \text{ plus } H2 \Rightarrow 0.051 \text{ mm plus } 0.125 \text{ mm} = 0.176 \text{ mm}$.

Appellant’s height (G) of the lowermost extent of the well corresponds to Akeno’s d1 plus H2 which is 0.176 mm.

Appellant’s overall height (A) correspond to Akeno’s H1.

Therefore, since the claims require $G/A < 0.6$, and Akeno’s $(d1 + H2)/H1$ is $0.176 \text{ mm}/0.348 \text{ mm}$ equating to approximately 0.50575, then the claimed requirement is met by Akeno et al. since $0.50575 < 0.6$.

Appellant’s argument concerning claim 27 is not found persuasive since the ratio of an overall height of at least one of the heads (Akeno’s H1’ minus H2), measured perpendicular to the sheet-form base from a lowermost extent of the tip to an uppermost extent of the head, to a height of a lowermost extent of the well (Akeno’s d1 plus H2), measured from and perpendicular to the sheet-form base, is greater than 0.7, which corresponds to Akeno’s $(H1' \text{ minus } H2)/(d1 \text{ plus } H2) = (0.297 \text{ mm} - 0.125 \text{ mm})/(0.051 \text{ mm} + 0.125 \text{ mm}) = 0.172/0.176$ which equates to approximately 0.977, which is greater than 0.7.

As for Appellant’s arguments concerning claims 48-55, 60-68, 78 and 79 not being anticipated by Akeno et al, based on “the Examiner’s conclusion is based solely on improper

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scaling of patent drawings, since the claims use phrases such as “is less than”, “of at least”, “at least about”, “is greater than”, “of less than”, “of between about”, and “at least”; the claims are considered to meet what applicant considers as a not-to-scale drawings since exact measurement dimensions are not required in the claims.

As for Appellant’s arguments concerning claims 5, 14, and 24 not being obvious over Akeno et al, because “Applicant has discovered that a G/A ratio of less than 0.6 provides fastener elements that are easier to de-mold from cavities of mold rolls, providing for improved manufacturability at a reduced cost”, “that fastener elements having such ratios provide for improved fastening performance when mating with, e.g., low loft loops, and also provide for enhanced product cycle life”, “that each head of the fastener elements of claim 1 can demold without being substantially impeded by its neighboring head, which allows for each fastener element to return substantially to its nominal shape after demolding”, and “that when a load is applied to the fastener elements of claim 1 (such as by an engaged loop), the crook of each fastener element can bend open to release the loop without impeding the action of the neighboring crook”, these arguments are not found persuasive since these arguments are unsupported in the application disclosure, and are without any affidavit attesting to their purposeful merit. Furthermore, the application disclosure provides not criticality of the argued claimed dimension features.

As for Appellant’s arguments concerning claims 30, 45, 50 and 60, not being obvious over Akeno et al, because “Akeno does not disclose or even suggest the claimed J/G or L/G ratios of claims 27 and 48, respectively, nor provides any guidance to one of ordinary skill that would have led to Applicant’s solution”, these arguments are not found persuasive since the claims use phrases such as “is less than”, “of at least”, “at least about”, “is greater than”, “of less than”, “of between about”, and “at least”; the claims are considered to meet what applicant considers as a not-to-scale drawings since exact measurement dimensions are not required in the claims.

As for Appellant’s arguments concerning claim 64 as not being obvious over Akeno et al, because “Akeno does not disclose or even suggest a mold release factor less than 0.1” and that “there is no indication in Akeno that such a mold release factor helps in removing the molded fastener elements from cavities of mold rolls, e.g., to prevent mold fouling and wear, and

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decrease permanent distention of the hook head" is not found persuasive, since the "ratio" is "less than 0.1" would encompass a "zero ratio" which would negate the required ration feature.

As for Appellant's arguments concerning claims 24, 45 and 60 as not being obvious over Akeno et al. in view of Ramanko because "that Romanko fails to provide the elements of the base claim missing from Akeno" and "Romanko's fastener elements do not even have "V" shaped cutout between the heads" are not found persuasive for the reasons provided herein regarding claims 1, 27 and 48 above.

As for Appellant's arguments concerning claims 10 and 35 as not being obvious over Akeno et al. in view of Takizawa because "Takizawa does not disclose or even suggest a height (G) of a lowermost extent of the well that is less than 60 percent of an overall height (A) of the fastener element, as claim 1 requires, nor does he disclose or suggest a ratio of an overall height (J) of at least one of the heads to a height (G) of a lowermost extent of the well that is greater than 0.7, as claim 27 requires. In fact, Takizawa does not disclose even a single dimension for his fastener elements" are not found persuasive for the reason provided herein regarding claims 1 and 27 above. Takizawa has been cited principally as disclosing fastener elements having tips extending toward the base.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

Robert J. Sandy



**ROBERT J. SANDY
PRIMARY EXAMINER**

Conferees:

J. J. Swann 

Meredith C. Petravick 